UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,535	12/09/2003	Alexei A. Karve	IBM-267	4563

7590   10/20/2010

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EXAMINER
MORRISON, JAY A

ART UNIT	PAPER NUMBER
2168	

MAIL DATE	DELIVERY MODE
10/20/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/731,535	KARVE ET AL.
	Examiner	Art Unit	
	JAY A. MORRISON	2168	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

> A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
> WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
> - Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
>   after SIX (6) MONTHS from the mailing date of this communication.
> - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
> - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
>   Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
>   earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>26 June 2007</u>.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
     closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-36</u> is/are pending in the application.
     4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) <u>1-36</u> is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
     a) ☐ All   b) ☐ Some * c) ☐ None of:
        1. ☐ Certified copies of the priority documents have been received.
        2. ☐ Certified copies of the priority documents have been received in Application No. _____.
        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
            application from the International Bureau (PCT Rule 17.2(a)).
     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)   4) ☐ Interview Summary (PTO-413)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   Paper No(s)/Mail. _____.
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)   5) ☐ Notice of Informal Patent Application
     Paper No(s)/Mail Date _____.   6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on

6/26/2007 has been entered.

Remarks

2.   Claims 1-36 are pending.

Claim Objections

3.   Claim 1 is objected to because of the following informalities:

        a.   As per claim 1, line 7: "A.) Defining" should be "A) defining" (remove

period and capitalization). This same problem is repeat throughout claimset, so

please fix where appropriate.

         Appropriate correction is required.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in
> public use or on sale in this country, more than one year prior to the date of application for patent in
> the United States.

5.   Claims 1-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Morzy

("Group bitmap index: A structure for association rules retrieval." KDD-98, 1998).

As per claim 1, Morzy teaches

An article of manufacture comprising computer usable medium having computer

readable program code means embodied therein for causing a relationship to be

implemented within a database using BitSets, said program code being stored in

computer readable memory or storage device, the computer readable program means

in said article of manufacture comprising computer readable program code means for

causing a computer to effect: (see abstract)

A.) Defining a database scheme; B.) Quantify a relationship among a plurality of

entities; (page 1, Storage Structure section, first paragraph)

C.) Populate said database with instances of independent relationships among

said entities and concurrently populating said database with Bitsets, inserts, delete

and/or changes, there being constraints on the number of keys in the BitSet to allow

database integrity thus disallowing incorrect relationship data from being entered into

said database, there being associations stored in the form of said Bitsets free from

dependency on attribute data values; (page 2, Group Bitmap Index section)

D.) Submitting an explicit query for desired information so that said database

performs evaluation of said query using said Bitsets, said Bitsets being of variable

length and prepopulated based upon associations said query processing being

independent of data values, said query for desired information being queries for

categorization involving retrieving entities associated with all levels with a single query

using column functions for relationships and Boolean Rule evaluation using a method

selected from the group consisting of iteration of. recursive queries, confirmation of

existence of or count of entities in the relationship; (page 2, Simple Group Bitmap Index

section)

E.) Database generates a resultant set; F.) Resultant set returned to a requestor;

G.) Repeat any or all steps as needed D through F until a recursive association under

consideration for said resultant set is exhausted, (page 2, Queries section)

said steps for causing a relationship to be implemented within said database

using BitSets being free of indexing. (page 2, Simple Group Bitmap Index section)

As per claim 2, <u>Morzy</u> teaches

an independent query to said database and said data base transforms said query

to a bit set query. (page 2, Queries section)

As per claim 3, <u>Morzy</u> teaches

the use of BitSets, said BitSets being selected from the group consisting of User

Defined Type BitSets and fast User defined functions. (page 2, Group Bitmap Index

section, first paragraph)

As per claim 4,

if the the relationship in said database comprises one or more levels of

inheritance relationships, the aggregation of inheritance bitsets through forward and/or

backward propagation. ('if' denotes an optionally recited limitation and optionally recited

limitations are not guaranteed to take place and are therefore not required to be taught,

see MPEP § 2106 Section II(C))

As per claim 5,

if the relationship in said database comprises one or more levels of boolean

expression relationships, the generation of boolean expression bitsets through forward

and/or backward propagation. ('if' denotes an optionally recited limitation and optionally

recited limitations are not guaranteed to take place and are therefore not required to be

taught, see MPEP § 2106 Section II(C))

As per claim 6, <u>Morzy</u> teaches

the use of fast User Defined Functions, said fast User Defined Functions being

selected from the group consisting of scalar functions and column functions. (page 2,

Queries section)

As per claim 7, <u>Morzy</u> teaches

the use of scalar functions. (page 2, Queries section)

As per claim 8, <u>Morzy</u> teaches

the use of scalar functions said scalar functions selected from the group

consisting of BSGetLength(B1TSET), BSInit0, BSInit(BIGINT,BIGINT), BSSetBit(BitSet,

BIGINT), BSClearBit(BitSet, BIGINT), BSGetBit(BIGINT), BSAnd(BitSet, BitSet),

BSOr(BitSet, BitSet), BSEquals(BitSet, BitSet), BSMinus(BitSet, BitSet),

BSAndEquals(BitSet, BitSet), BSAndIsEmpty(BitSet, BitSet), BSGetBitAt(BitSet,

BIGINT), BSGetUpperB otmd(BitSet), BSGetLowerBound(BitSet). (page 2, Group

Bitmap Index section)

As per claim 9, <u>Morzy</u> teaches

the use of column functions. (page 2, Queries section)

As per claims 10-18,

These claims are rejected on grounds corresponding to the arguments given

above for rejected claims 1-9 and are similarly rejected.

As per claims 19-26,

These claims are rejected on grounds corresponding to the arguments given

above for rejected claims 1-9 and are similarly rejected.

As per claims 27-36,

These claims are rejected on grounds corresponding to the arguments given

above for rejected claims 1-9 and are similarly rejected.

Response to Arguments

6.   Applicant's arguments with respect to claims 1-36 have been considered but are

moot in view of the new ground(s) of rejection.

Conclusion

7.   The prior art made of record, listed on form PTO-892, and not relied upon is

considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jay A. Morrison whose telephone number is (571) 272-

7112. The examiner can normally be reached on M-F 8-4:30.

     If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached on (571) 272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

     Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jay A Morrison/
Primary Examiner, Art Unit 2168

Jay Morrison
TC2100